



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Air transport of dangerous goods

### Course

Field of study

Aviation

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

4/7

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

dr inż. Anna Kobaszyńska-Twardowska

anna.kobaszynska-twardowska@put.poznan.pl

Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

mgr inż. Monika Wantuła

monika.wantula@put.poznan.pl

Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

### Prerequisites

The student has basic knowledge of air transport, logistics, physics and chemistry. Has the ability to precisely formulate questions; ability to set priorities important in solving the set tasks. The student is able to integrate the information obtained, interpret it, draw conclusions, formulate and justify opinions of the ability to perceive, associate and interpret phenomena occurring in air transport management.

The student is aware of the importance and understands the non-technical aspects and effects of transport activities, including issues related to dangerous goods.



### Course objective

To familiarize students with the basics of knowledge about dangerous goods, legal, national and international regulations regarding the transport of dangerous goods (e.g. IATA DGR), air transport means, methods and techniques of their preparation for air transport, air transport itself, transshipment and storage.

### Course-related learning outcomes

#### Knowledge

has ordered, theoretically founded general knowledge in the field of technology and various means of air transport, about the life cycle of means of transport, both hardware and software, and in particular about the key processes taking place in them

the student has knowledge of aviation safety and management. The student knows the concept of the human factor and methods of assessing human reliability, has detailed knowledge related to selected issues in the field of human capabilities and limitations during aircraft operation in flight, its impact on health and the ability to perform air operations, as well as the possibility of improving physical condition

#### Skills

can assess - at least in a basic scope - various aspects of the risk associated with a logistics undertaking in air transport

#### Social competences

is aware of the importance of knowledge in solving engineering problems and knows examples and understands the causes of faulty engineering projects that have led to serious financial and social losses, or to a serious loss of health and even life

is able to think and act in an entrepreneurial way, incl. finding commercial applications for the created system, bearing in mind not only the business benefits, but also the social benefits of the activity

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Assessment of knowledge and skills on written credit in the form of a test.

### Programme content

Introduction, sources of law regarding the transport of dangerous goods. Loads - introduction to the subject: load and goods, basic types of loads, including dangerous ones, transport susceptibility of loads, exposure of loads, risk of damage, sensitivity to impacts, basic methods of load classification. Definition of dangerous goods in aviation and their impact on flight safety. Loading units: definition and nature of



loading units, tasks of loading units and means, auxiliary means of preparing loading units - classification, types of loading units and detailed discussion of individual types of loading units used in air transport. Marking of loading units / packages and their identification: definition and legal bases, basic types of signs and their form, marking of loading units (including especially dangerous goods). Transport and transshipment technologies: definition, basic types of transport technologies. Arrangement and securing of cargo in the aircraft: cargo distribution (basic guidelines), factors determining cargo safety in aircraft, cargo securing - security measures. Legal bases for aviation cargo transportation, including special (hazardous) cargo. ICAO Regulation (Annex No. 18 to Aviation Regulations), the Warsaw Convention, the IATA-DGR Convention and the Chicago Convention. Cargo damage: causes and procedures as well as insurance issues, cargo condition monitoring.

### Teaching methods

informative (conventional) lecture (systematic transfer of information) - through multimedia presentations with blackboard aid.

### Bibliography

#### Basic

1. Mindur L. (red.), Technologie transportowe XXI wieku, Instytut Technologii Eksploatacji – PIB, Warszawa 2008
2. Mokrzyński H., Ładunkoznawstwo, Technologia zabezpieczenia ładunków w transporcie, WKiŁ, Warszawa 1985
3. Prochowski L., Żuchowski A., Technika transportu ładunków, WKiŁ, Warszawa 2009

#### Additional

1. Instrukcja Techniczna ICAO - Załącznik 18 do Konwencji Międzynarodowego Lotnictwa Cywilnego, Załącznik do obwieszczenia Nr 11 Prezesa Urzędu Lotnictwa Cywilnego z dnia 10 czerwca 2014 r.
2. Instrukcja IATA – Dangerous Goods Regulations,
3. Ustawa z dnia 3 lipca 2002 r. Prawo lotnicze, tekst ujednolicony Dz. U. z 2013 r. poz. 1393, z 2014 r. poz. 768.
4. Pusty T., Przewóz materiałów niebezpiecznych, Poradnik kierowcy, WKiŁ, Warszawa 2003



5. Litwinowicz w., Transport lotniczy towarów, Wydawnictwa Komunikacji i Łączności, Warszawa 1969

### Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for classes, preparation for tests,) <sup>1</sup>	10	0,5

<sup>1</sup> delete or add other activities as appropriate